National Institute of Standards and Technology

. . .working with industry to develop and apply technology, measurements and standards

eBusiness Standards Reuse, Convergence and Deployment Workshop #1

May 29-30, 2003

Workshop Objectives

* Define specific ways to improve the development, synchronization and deployment of needed eBusiness standards and infrastructure

* Define priorities for encouraging convergence or achieving interoperability of cross-industry eBusiness standards

* Define what industry needs NIST to develop or provide to aid in achieving these goals

Scope: improving the delivery and use of standards for automating business to business transactions for design, procurement, fabrication, delivery, operation and maintenance of products and services.

National Institute of Standards and Technology

NIST's mission is to develop and promote measurement, standards, and technology to enhance productivity, facilitate trade, and improve the quality of life.

NIST Assets Include:

- **3,000 employees**

- **1,600 guest researchers**

- **$820 million annual budget**

- **NIST Laboratories -- National measurement standards**

- **Advanced Technology Program -- $640 million current R&D partnerships with industry**

- **Manufacturing Extension Partnership -- 400 centers nationwide to help small manufacturers**

- **Baldrige National Quality Award**

Technology

Best Practices

Measurements & Standards

R & D

Funding

Quality

NIST Laboratories and Technical Staff
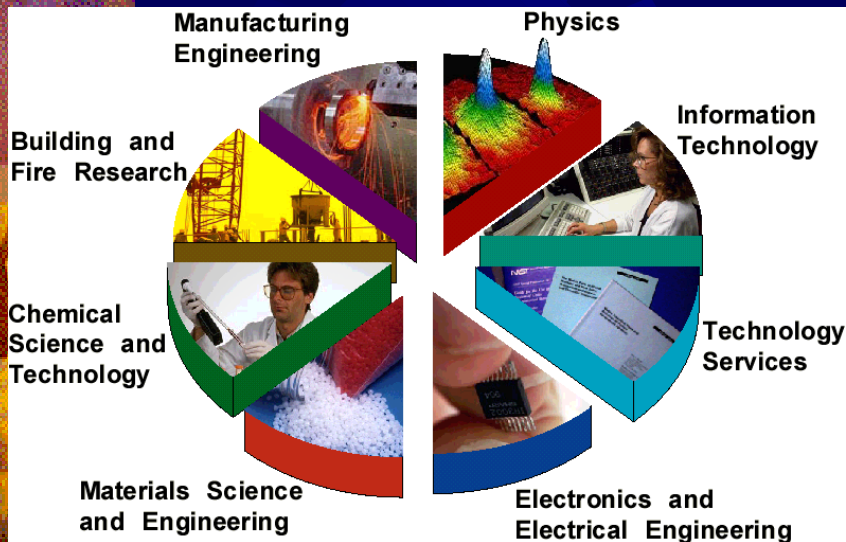
- **Enhance US industrial competitiveness and economic growth through critically-needed standards, measurements, and data**
- **Highly leveraged measurement and research capabilities supporting trillions of dollars in products and services**
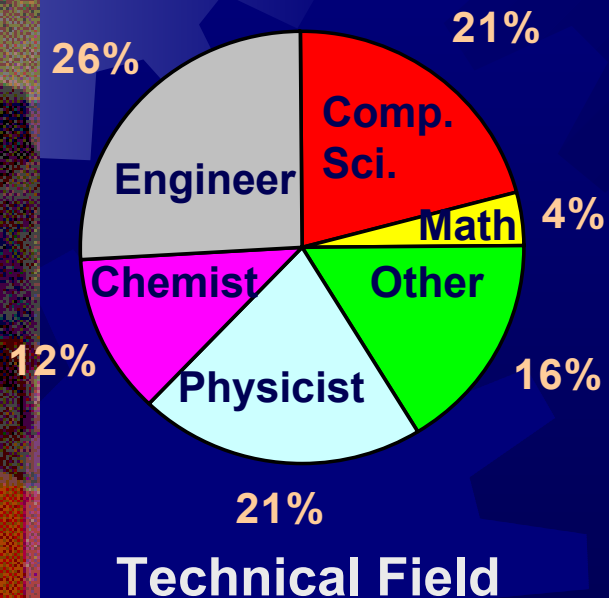
1528 Full Time Permanent Technical Staff (FY2002)

Technical Field

**Degree**
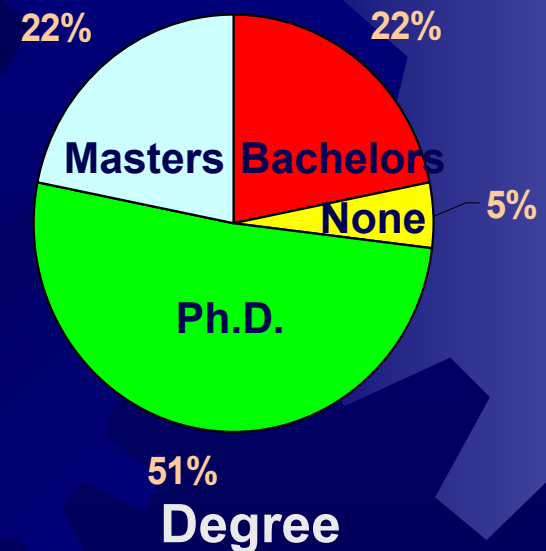
Baldrige National Quality Program

- Premier U.S. award for performance excellence and quality achievement.

- Awards in Manufacturing, Service, Small Business, Education, Health Care.

- More than 2 million copies of Criteria for Performance Excellence distributed (not including downloads from Web).

- Quality programs modeled on Baldrige: 55 state and local (up from fewer than 10 in 1990); 60 international.

www.quality.nist.gov

Manufacturing Extension Partnership

- Nationwide network providing hands-on help to smaller manufacturers to become globally competitive
  - **Business assistance**
    - Quality management
    - Human resource development
    - Financial planning
    - Other services
  - **Technical assistance**
    - E-commerce
    - Process improvement
    - Plant layout
    - Product development
    - Energy audits
    - Other services
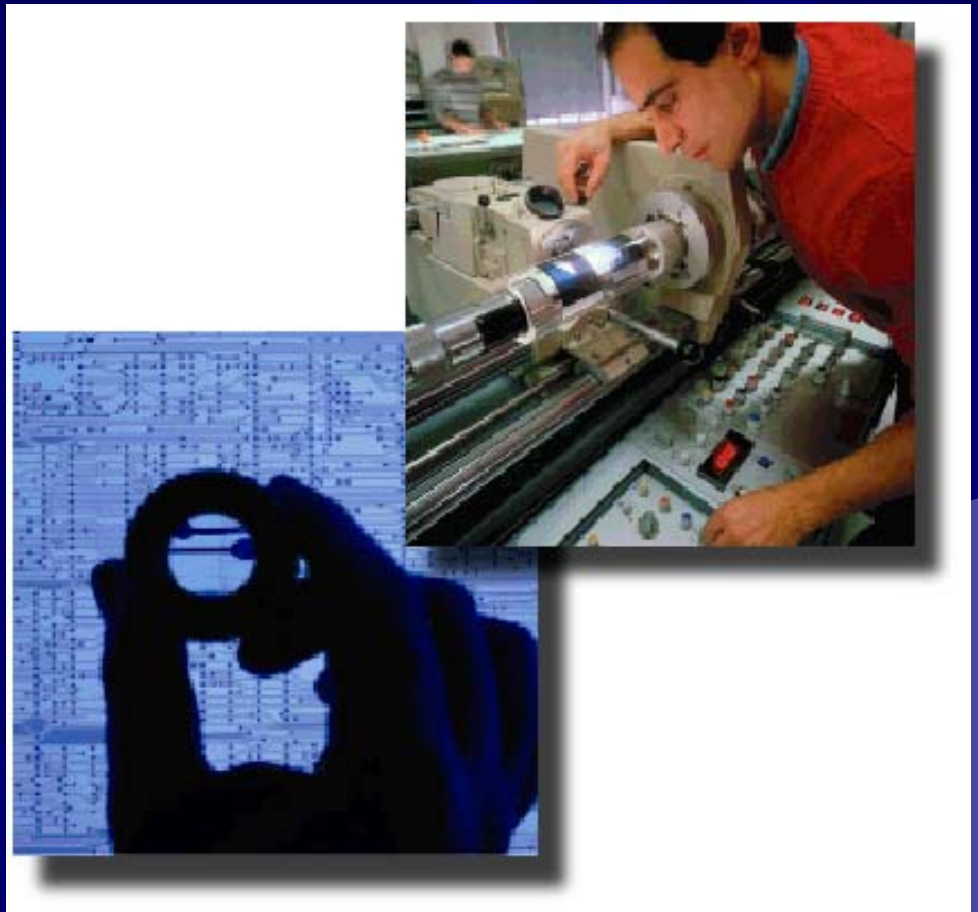
350,000 small U.S. manufacturers produce nearly half of value added in manufactured goods, employ more than 11 million workers

www.mep.nist.gov

NIST Advanced Technology Program
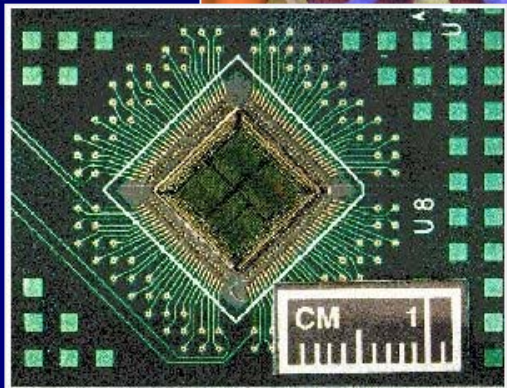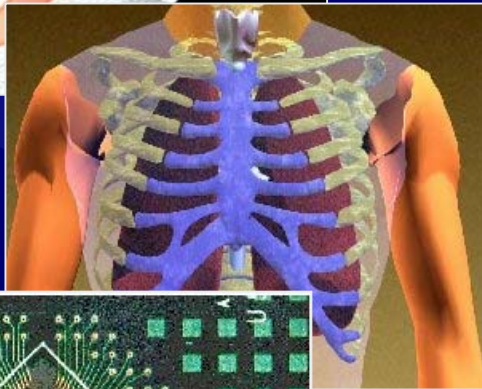
- Co-funding of private sector R&D to accelerate the development of high-risk, broadly enabling technologies.

- Auto Body Consortium - improved fitting of parts to save money for manufacturers and consumers

- Tissue Engineering - new materials to repair damaged ligaments and tendons: several billion dollar impact

- "DNA Chips" - new technology for cheap, rapid genetic analysis

www.atp.nist.gov

NIST Laboratories Products and Services

- **Measurement Research**
  - 2,200 publications/year
- **Standard Reference Data**
  - 65 types available
  - 5,000 units sold/ year
- **Standard Reference Materials**
  - >1,300 products available
  - 30,000 units sold/year
- **Calibrations and Tests**
  - >3,000 items calibrated/year
- **Laboratory Accreditation**
  - 764 accreditations
- **Standards Committees**
  - 400 NIST staff, 900 committees
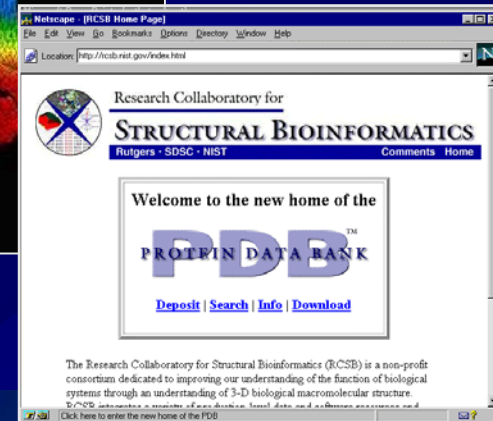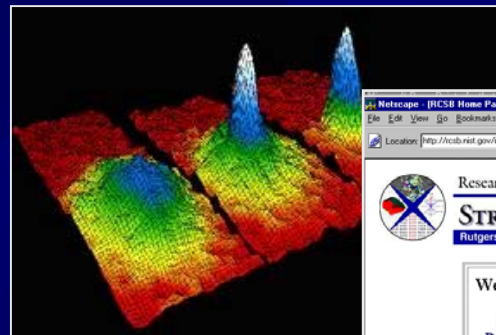
Pre-workshop Work Sheet

* Distributed to industry "vertical" initiatives to collect insights on industry status and needs (also provided online)

* Draft observations and synthesis of inputs added to the summary of inputs

* Summary of inputs distributed prior to the workshop to stimulate deliberation and insights

* The draft summary is only a tool for the workshop; not a formal report

Sample Results

- **Q3**. Does your industry have a roadmap for eBusiness standards development & deployment?

- **Summary:** Roughly 50% in development. …Given that the majority of the roadmap efforts are in development, this is an area where collaboration among industry sectors could provide timely results and convergence.

Sample Results (cont.)

* **Q7.** Which of the listed standards are provided as machine readable specifications…?

* **Summary:** This question may have been confusing to some. Majority say their specifications are machine readable; this is for syntax checking, but the semantics of the payloads are not machine readable.

Sample Results (cont.)

- **Q8.** Does your industry use a Data Dictionary to define common elements?

- **Summary:** Although most of the participants use data dictionaries, we could discuss in what formats the data dictionaries are documented, and if there is possibility and value in adopting some type of standard specification/format for data dictionaries. We will discuss the objectives and formalisms of the data dictionaries and how these have been leveraged.

Sample Results (cont.)

- **Q11.** Is this model of eBusiness capabilities "stack" useful and sufficient for providing a generic framework for describing what is needed…?

Conceptual Model For B2B

Transaction Instance	
Transaction Patterns	
Specialized Content	Specialized Processes
Generalized Content	Generalized Processes

Vertical Industry Area

Content Definition Language	Process Description Language
Registry / Directory	
Repository	
Presentation Description	
Service Description Language	
Messaging	
XML Syntax	

XML and Web Services Area

Transport

Network

Conformance and Interoperability

Security

Management

Quality of Services

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- **Summary:** There is general support for the generic model, although every organization has their own idea of the stack, e.g., support for real-time sharing/collaboration.

Sample Results (cont.)

- **Q16.** What are essential technology options for lowering the costs of development and deployment of eBusiness standards??

- **Summary:** Majority of the participants listed:

  - Libraries of common vocabularies and business process models (i.e., accessible and used by multiple industries) to lower overall data and/or semantic transformation processes

  - Use case and schema capabilities registry

Sample Results (cont.)

* **Q18.** Is the lack of comprehensive testing and certification of software implementations of the eBusiness standards a barrier to your industry's adoption of eBusiness capabilities?

* **Summary:** This question was not clearly stated. There is confusion about the distinctions between:

  * **validation testing**

  * **implementation testing**

  * **interoperability testing**

  * **software certification services**. The responses indicated no strong interest in certification.

Sample Results (cont.)

- **Q20.** What issues has your industry identified with implementations of available eBusiness standards?

- **Summary:** Too many standards and the lack of commonality in the use of standards.

Sample Results (cont.)

- **Q22.** Is your industry monitoring or participating in any of the efforts to develop "core components", e.g., ebXML core components? If yes, what are your concerns and recommendations…?

- **Summary:** There is need for effective metrics, methods and procedures for converging existing data element sets to common data elements, e.g., "core components".